TSML4728A -TSMZ1330A
Surface Mount Zener Diodes

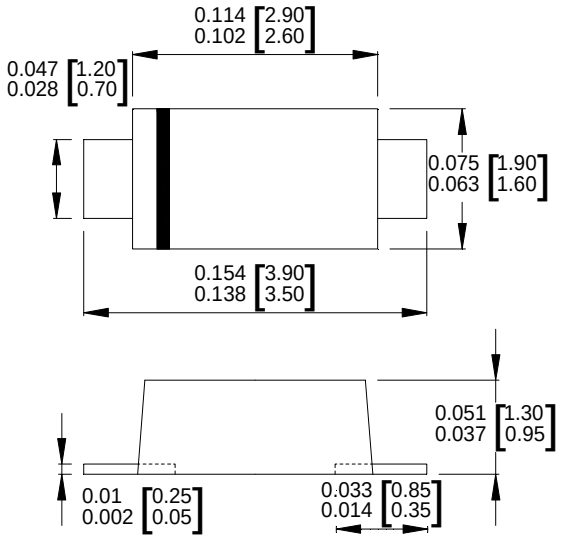
V_Z: 3.3 to 330 V

P_D: 1 W

Features

- Glass passivated chip
- Low leakage
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- Lead (Pb)-free
- For use in stabilizing and clipping with high power rating

SMF



Dimensions : inch [mm]

Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Lead: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting position: Any

Maximum Ratings(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	UNIT
DC power dissipation at T_L = 50 °C(1)	P_D	1	W
Maximum forward voltage at I_F = 200 mA	V_F	1.2	V
Maximum thermal resistance junction to ambient air(2)	$R_{\Theta JA}$	170	K/W
Junction temperature range	T_J	- 55 to + 175	°C
Storage temperature range	T_{STG}	- 55 to + 175	°C

Note:

(1) T_L = Lead temperature at 3/8 " (9.5mm) from body

(2) Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

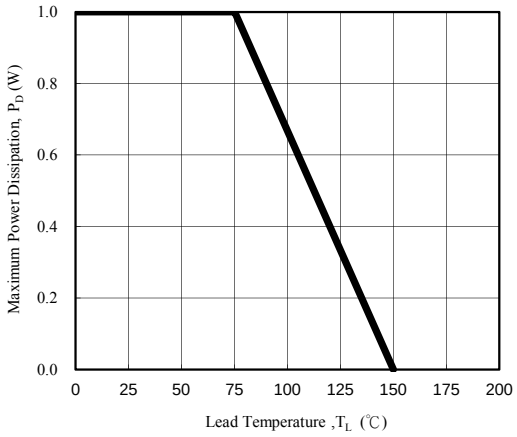


Fig. 1 - Power Temperature Derating Curve

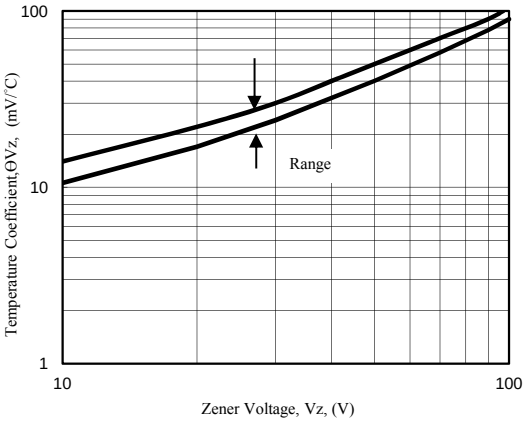


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

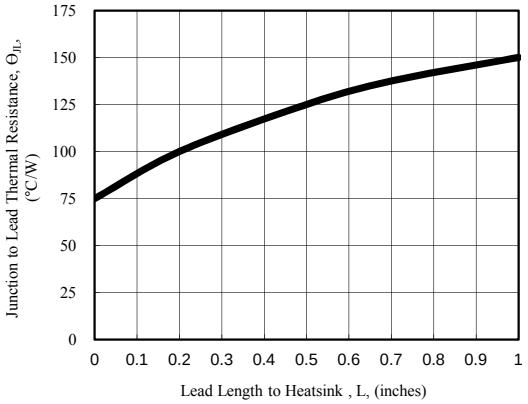
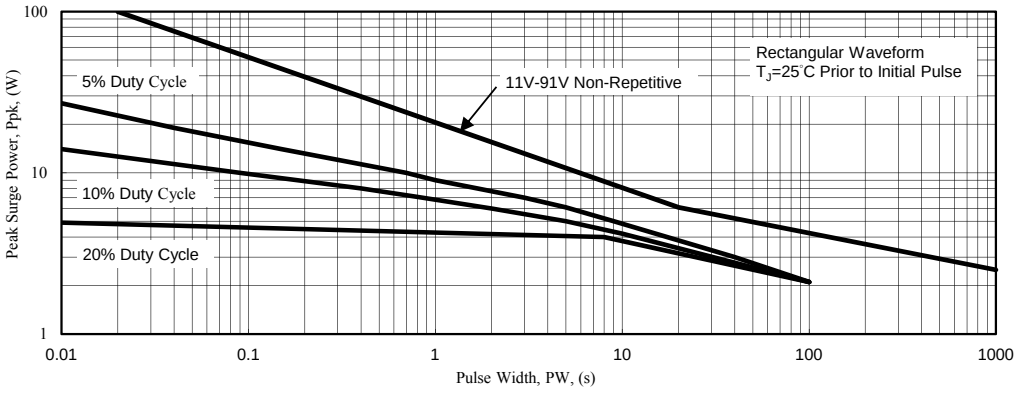


Fig. 3 - Typical Thermal Resistance v.s. Lead Length



Fg. 4 - Maximum Surge Power

Electrical Characteristics(T_A=25℃ unless otherwise noted)

Part Number	Device Marking Code	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current	Maximum Surge Current
		V_Z @ I_{ZT}	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R @ V_R		I_{ZM}	I_{RM}
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)	(mApk)
TSML4728A	28A	3.3	76.0	10.0	400	1.00	100.0	1.0	274.0	1370
TSML4729A	29A	3.6	69.0	10.0	400	1.00	100.0	1.0	251.0	1255
TSML4730A	30A	3.9	64.0	9.0	400	1.00	50.0	1.0	232.0	1160
TSML4731A	31A	4.3	58.0	9.0	400	1.00	10.0	1.0	210.0	1050
TSML4732A	32A	4.7	53.0	8.0	500	1.00	10.0	1.0	192.0	960
TSML4733A	33A	5.1	49.0	7.0	550	1.00	10.0	1.0	177.0	885
TSML4734A	34A	5.6	45.0	5.0	600	1.00	10.0	2.0	161.0	805
TSML4735A	35A	6.2	41.0	2.0	700	1.00	10.0	3.0	146.0	730
TSML4736A	36A	6.8	37.0	3.5	700	1.00	5.0	4.0	133.0	660
TSML4737A	37A	7.5	34.0	4.0	700	0.50	5.0	5.0	121.0	605
TSML4738A	38A	8.2	31.0	4.5	700	0.50	5.0	6.0	110.0	550
TSML4739A	39A	9.1	28.0	5.0	700	0.50	0.5	7.0	100.0	500
TSML4740A	40A	10.0	25.0	7.0	700	0.25	0.5	7.6	91.0	454
TSML4741A	41A	11.0	23.0	8.0	700	0.25	0.1	8.4	83.0	414
TSML4742A	42A	12.0	21.0	9.0	700	0.25	0.1	9.1	76.0	380
TSML4743A	43A	13.0	19.0	10.0	700	0.25	0.1	9.9	69.0	344
TSML4744A	44A	15.0	17.0	14.0	700	0.25	0.1	11.4	61.0	305
TSML4745A	45A	16.0	15.5	16.0	700	0.25	0.1	12.2	57.0	285
TSML4746A	46A	18.0	14.0	20.0	750	0.25	0.1	13.7	50.0	250
TSML4747A	47A	20.0	12.5	22.0	750	0.25	0.1	15.2	45.0	225
TSML4748A	48A	22.0	11.5	23.0	750	0.25	0.1	16.7	41.0	205
TSML4749A	49A	24.0	10.5	25.0	750	0.25	0.1	18.2	38.0	190
TSML4750A	50A	27.0	9.5	35.0	750	0.25	0.1	20.6	34.0	170
TSML4751A	51A	30.0	8.5	40.0	1000	0.25	0.1	22.8	30.0	150
TSML4752A	52A	33.0	7.5	45.0	1000	0.25	0.1	25.1	27.0	135
TSML4753A	53A	36.0	7.0	50.0	1000	0.25	0.1	27.4	25.0	125
TSML4754A	54A	39.0	6.5	60.0	1000	0.25	0.1	29.7	23.0	115
TSML4755A	55A	43.0	6.0	70.0	1500	0.25	0.1	32.7	22.0	110
TSML4756A	56A	47.0	5.5	80.0	1500	0.25	0.1	35.8	19.0	95
TSML4757A	57A	51.0	5.0	95.0	1500	0.25	0.1	38.8	18.0	90
TSML4758A	58A	56.0	4.5	110.0	2000	0.25	0.1	42.6	16.0	80
TSML4759A	59A	62.0	4.0	125.0	2000	0.25	0.1	47.1	14.0	70
TSML4760A	60A	68.0	3.7	150.0	2000	0.25	0.1	51.7	13.0	65
TSML4761A	61A	75.0	3.3	175.0	2000	0.25	0.1	56.0	12.0	60
TSML4762A	62A	82.0	3.0	200.0	3000	0.25	0.1	62.2	11.0	55
TSML4763A	63A	91.0	2.8	250.0	3000	0.25	0.1	69.2	10.0	50
TSML4764A	64A	100.0	2.5	350.0	3000	0.25	0.1	76.0	9.0	45
TSMZ1110A	11Z	110.0	2.3	450.0	4000	0.25	0.1	83.6	8.6	40
TSMZ1120A	12Z	120.0	2.0	550.0	4500	0.25	0.1	91.2	7.8	37
TSMZ1130A	13Z	130.0	1.9	700.0	5000	0.25	0.1	98.8	7.0	34
TSMZ1150A	15Z	150.0	1.7	1000.0	6000	0.25	0.1	114.0	6.4	30
TSMZ1160A	16Z	160.0	1.6	1100.0	6500	0.25	0.1	121.6	5.8	28
TSMZ1180A	18Z	180.0	1.4	1200.0	7000	0.25	0.1	136.8	5.2	25
TSMZ1200A	20Z	200.0	1.2	1900.0	9990	0.25	0.1	152.0	4.7	22
TSMZ1220A	22Z	220.0	1.0	1600.0	8000	0.25	0.1	167.2	4.0	20
TSMZ1240A	24Z	240.0	0.9	1800.0	8500	0.25	0.1	182.4	3.8	19
TSMZ1250A	25Z	250.0	0.9	2000.0	9000	0.25	0.1	190.0	3.6	18
TSMZ1270A	27Z	270.0	0.8	2100.0	9000	0.25	0.1	205.0	3.3	16
TSMZ1300A	30Z	300.0	0.8	2300.0	9500	0.25	0.1	228.0	3.0	15
TSMZ1330A	33Z	330.0	0.7	2500.0	9500	0.25	0.1	250.2	2.7	13

Notes :

(1) The type number listed have a standard tolerance on the nominal zener voltage of ± 5 %

(2) The revese surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on IZT per JEDEC method